

cc. Nr.

AP0023910

Abstracting Service
CHEMICAL ABST.

Ref. Code

2/70 URO136

34922d Refining deformable aluminum alloys with inert gases. Andreev, A. D.; Gogin, V. B.; Kunina, G. A.; Partin, I. A.; Cherepok, G. V.; Bosoy, A. M.; Ryuchina, G. V. (USSR). *Tsvet. Metal.* 1967, 42(10), 71-3 (Russ). Refining deformable Al alloys with Ar instead of flux decreased markedly the no. of rejected test pieces due to porosity and slag and scum inclusions; increased the d. and decreased the H content of metal; and improved the mech. properties. Increasing the Ar consumption decreased the H content. The use of Ar instead of Cl gave markedly fewer defective forgings and stampings.

E. M. Elkin

mg

REEL/FRAME
19650478

USSR

UDC 627.8(670.17):69.050.000.000

BOSOVSKIY, L. M., OVCHYAN, G. O., Engineers

"Effect of an Earthquake on the Structure of the Cascade of the Chir-Yurt'sk
Hydroelectric Power Station"

Moscow, Gidrotekhnicheskoye stroitel'stvo, No. 1, Jan 72, pp 18-20

Abstract: The earthquake occurred 14 May 1970 in Dagestanskaya ASSR and the epicentral zone had an extent of 40-50 km. The intensity of the earthquake was 8 points in the epicentral zone and 7 points in the region of the power station. The earthquake did not disrupt normal operation of the cascade of the power station on the Sulak River. There was slight damage to the crest of the earth dam and restoration did not effect the operation of the cascade. A diversion channel, the penstock and the water distribution channel between the station and the siphon duct through the Sulak River did not receive any noticeable damage from the earthquake. Damage to the earth dam that occurred despite the fact that the strength of the earthquake was not greater than the designed strength of the dam led to the conclusion that standards for designing earth dams for resistance to earthquakes do not fully reflect actual conditions under a dynamic load.

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Explosives and Explosions

USSR

UDC 662.215.5 + 539. 3

AMISOV, A. P., BOSTANDZHIYAN, S. A., and ZIMENKO, ZH. A., Institute of Chemical Physics, Academy of Sciences USSR, Chernogolovka Moskovskaya Oblast'

"Heating-up and Ignition of Solid Explosives Under Shear Destruction"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 6, Apr 73, pp 1361-1364

Abstract: In an attempt to determine conditions at which the formation of the foci of explosion initiation occur as a result of the spontaneous elastic discharge of the deformed parts, a theoretical analysis is carried out of the heating-up and ignition of solid explosives under shear destruction. The destruction process of solid explosives is governed by laws derived for plastic metals. The appearance of the heating-up foci resulting from spontaneous elastic discharge of solid explosives during their destruction is possible under conditions of $v > v_{cr} = 1.74$. As far as chemical reaction input is concerned, at small λ it has a negligible effect on the heating-up value. At higher λ the temperature at the friction plane increases explosively. Ignition occurs at λ values exceeding the critical value λ_{cr} . λ Represents the ratio of τ_m to τ_{ad} -- adiabatic period of

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USSR

AMOSOV, A. P., et al., Doklady Akademii Nauk SSSR, Vol 209, No 6, Apr 73,
pp 1361-1364

the induction of inflammation at maximal temperature T_m . Since on the average

α_{cr} was found to be $\cong 10$, τ_{ad} is less than or equal to $0.1 \tau_m$.

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AP0014406

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UR 0170

AUTHORS: Bostandzhiyan, S. A. and Stolin, A. M.

TITLE: Critical Conditions of Thermal Regime in Generalized Couette Flow

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PRIMARY SOURCE: Inzhenerno-Fizicheskiy Zhurnal, 1969, Vol 17, Nr 1, pp 86-94

Summary

Non-isothermal steady-state Newtonian fluid flow between two parallel plates is considered for three types of temperature boundary conditions with the account for the energy dissipation. The upper plate moves at constant velocity. The pressure gradient acts in the direction of plate motion. It is supposed that the liquid viscosity depends on the temperature by the hyperbolic law. The velocity and temperature profiles are obtained. It is shown that the steady-state regime is impossible when the values of some dimensionless parameter are greater than critical.

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USSR

BOSTANDZHIYAN, V. A.

"Determination of the Probability Density. The Necessary Volume of a Sample"

Opredeleniye Plotnosti Veroyatnosti. Neobkhodimyy Ob'em Byborki [English Version Above], Moscow, Nauka Press, 1971, 160 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V164K).

NO ABSTRACT.

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AA0016916

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

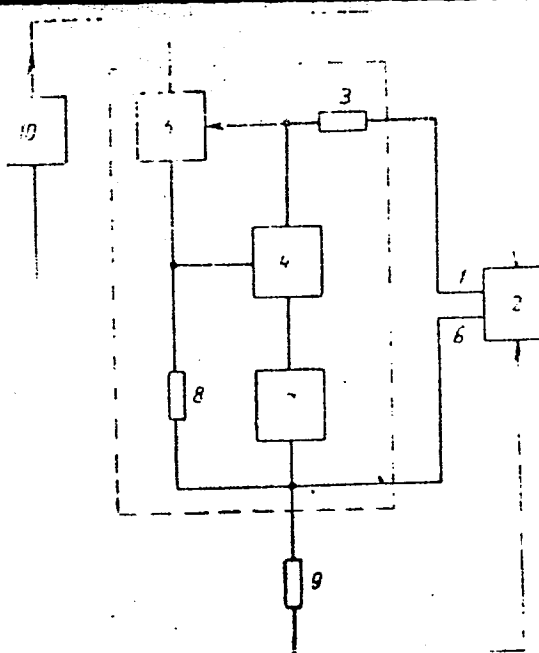
234476 STABILISED SUPPLY the output of the pulse forming network (2) is connected through resistor (3) to the controlling transistor (4) and the regulating transistor 5. The output (6) is connected to the source of the resistive voltage (7) and high stability resistor (8) and to the load (9).

A controlling pulse of the pulse forming network (2) opens controlling transistor (4). This one opens transistor (5) then a pulse current is passed from the supply (10) through load 9. The efficiency of the system is improved.

29.11.67. as 1200128/26-9, POSTANDZHION, ILL.G.
and POLIAKOV, V.I. (28.5.69) Bul. 4/10.1.69.
Class 21a, Int. Cl. H 02m.

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AA0016916



19600034

USSR

UDC 547.241

AZERBAYEV, I. N., DZHAYLAUOV, Yu. G., ~~BOSYAKOV, K. B.~~, YERZHANOV, K. B.,
SERIKBAYEV, K. S., and ALEKSEYEVA, N. N., Institute of Chemical Sciences,
Acad. Sc., KazSSR, Alma-Ata

"Reactions of Unsaturated Phosphites With Aldehydes and Ketones"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Khimicheskaya No 1,
Jan-Feb 73, pp 51-57

Abstract: Condensation of dipropargyl phosphite with chloral and bromal yields 0,0-dipropargyl (1-hydroxy-2,2,2-trichloroethyl)phosphonate and its tribromo analog even without any catalyst. In the presence of sodium alkoxide the reaction of diallyl phosphate with 2,5-dimethylpiperidone-4, 2,6-diphenylpiperidone-4, 2,6-di(2-hydroxyphenyl)-piperidone-4, 1,2,5-trimethylpiperidone-4 yields the respective 4-diallylphosphanepiperidones-4; with 2,2-dimethyltetrahydropyranone-4, 2,2-dimethyltetrahydrothiopyranone-4 and 2,5-dimethyltetrahydrothiopyranone-4 the products are the respective 4-diallylphosphane-tetrahydropyrans-4. The esters of α -hydroxyphosphinic acids of pyrone, and thiopyrone series are unstable, decomposing on distillation.

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USSR

UDC 547.241+547.362+547.81+547.823

AZERBAYEV, I. N., DZHAYLAUOV, S. D., BOSYAKOV, Yu. G., YERZHANOV, K. B.,
and SERIKBAYEV, K. S., Institute of Chemical Sciences, Academy of Sciences
KazakhSSR

"Reaction of Dipropargylphosphorous Acid With Heterocyclic Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 288-292

Abstract: Reaction of dipropargylphosphorous acid with α -ketones of the pyran, thiopyran, and piperidine series in presence of sodium alkoxide leads to the formation of respective dipropargyl esters of heterocyclic α -hydroxyphosphonic acids. It was shown that nucleophilic addition of dipropargyl phosphite to pyranone and thiopyranones, in contrast to piperidones, requires the presence of alkaline catalysts. It is assumed that the aminoketone acts as a catalyst.

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1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--RELATIONSHIP BETWEEN PROCESSES OF EXCITATION AND INTERNAL
INHIBITION IN TRACE CONDITIONED REFLEXES -U-
AUTHOR--(02)-BOSYY, M.K., SHPARKOVSKIY, I.A.
COUNTRY OF INFO--USSR *B*
SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP
578-584
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--CONDITIONED REFLEX, NEUROPHYSIOLOGY, SALIVARY GLAND,
INHIBITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1908 STEP NO--UR/0247/70/020/003/0578/0584
CIRC ACCESSION NO--AP0120565
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTERISTICS OF TRACE
CONDITIONED REFLEXES AND THE DYNAMICS OF NERVOUS PROCESSES IN THE
PERIODS OF THEIR FORMATION AND STABILIZATION WERE STUDIED ON SEVEN DOGS.
SECRETORY AND THERMOELECTRIC METHODS WERE APPLIED. IN THE FIRST
PERIOD THERE WAS A CONSIDERABLE DECREASE IN THE MAGNITUDES OF
PRELIMINARILY ELABORATED POSITIVE CONDITIONED REFLEXES, AND IN THE
SECOND THEY WERE OFTEN DISINHIBITED FOR A SHORT TIME. IT HAS BEEN
ESTABLISHED THAT THE NATURE OF THE TRACE CONDITIONED REFLEX, OF
TEMPERATURE CHANGES IN THE PAROTIC GLAND, OF SECRETION AND THE BEHAVIOUR
OF THE DOG IN RESPONSE TO THE STIMULUS OF A TRACE REFLEX DEPEND ON THE
MANNER OF ITS FORMATION, ON THE ANIMAL'S INDIVIDUAL PROPERTIES AND ITS
STATE DURING THE EXPERIMENT. FACILITY: CHAIR OF HUMAN AND
ANIMAL'S PHYSIOLOGY, PEDAGOGICAL INSTITUTE, CHERKASY.

UNCLASSIFIED

USSR

B

UDC 612.633.81

~~BOSYY, A. A.~~ and S-PARAKOVSKIY, I. A., Chair of Human and Animal Physiology,
Cherkassy Pedagogical Institute

"Relationship Between the Processes of Excitation and Internal Inhibition in Trade
Conditioned Reflexes"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 3, 1970, pp 578-584

Abstract: The interaction of excitation and inhibition was studied in dogs during the formation and stabilization of trace conditioned reflexes by the thermoelectric and secretory methods. During the formation of trace conditioned reflexes, the amount of secretion in response to the positive signal decreased substantially, regardless of the method employed to form the reflex. There was a temporary disinhibition of differentiation in the stabilization period. Changes in the temperature of the parotid gland, secretion, and reaction of the animal to the stimuli of the trace reflexes varied with the method of their formation, individual traits and the state of the animal during the experiment. The trace conditioned reflex formed from a pre-existing reflex by gradually lengthening the pause was characterized by a rise in temperature of the gland in response to the conditioned stimulus. When a trace conditioned reflex was formed directly in response to the conditioned stimulus of this reflex, the temperature rose or dropped, depending on whether excitation or inhibition predominated at the time the stimulus was presented.

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Books

USSR

UDC: 621.37/39(038)

TERESHCHUK, R. M., DOMBRUGOV, R. M., BOSYY, N. D. et al.

"The Radio Amateur's Handbook. In Two Parts. Part 1. Sixth Edition, Revised and Enlarged"

Spravochnik radiolyubitelya. V dvukh chastyakh. Ch. 1. Izd. 6-ye, ispr. i dop. (cf. English above), Kiev, "Tekhnika", 1970, 694 pp, ill. 1 r. 97 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A13 K)

Translation: The sixth edition of the handbook consists of two parts. The first part includes information on electrical and radio technology, electrical and radio materials, various radio components, acoustics and electroacoustics, electronic, ionic and semiconductor devices, low-frequency amplifiers, and radio transmission and reception equipment. A. K.

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USSR

UDC: 621.37/39(038)

TERESHCHUK, R. M., DOMBRUGOV, R. M., BOSYY, N. D. et al.

"The Radio Amateur's Handbook. Part 2. In Two Parts. Sixth Edition, Revised and Enlarged"

Spravochnik radiolyubitelya. Ch. 2. V dvukh chastyakh. Izd. 6-ye, ispr. i dop.
(cf. English above), Kiev, "Tekhnika", 1970, 678 pp, ill. 2 r. 7 k. (from
RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A14 K)

Translation: The second part of the handbook (for part 1 see Abstract 12A13) deals with elements and devices of pulse technology, TV receivers, magnetic recording equipment, measurements and measuring equipment, elements of automation and remote control, and also power supply for radio equipment. A. K.

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USSR

UDC 621.382.3

D'YAKONOV, V.P., BOSYY, V.I., KUZNETSOV, YU.A., KOSTRYUKOV, A.S., TSIGANKOV, V.A.

"Avalanche Transistor And Its Use In Circuit Technics"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices In The Technics Of Electrical Communication--Collection Of Works), Issue 9, Moscow, "Svyaz'," 1972, pp 159-166 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B187)

Translation: The structure and special features of a Type GT-338 avalanche transistor are described. A number of pulse circuits using avalanche transistors are presented, which provide the possibility of shaping pulses with a rise time less than 1 nanosec and an amplitude up to 10--15 V and higher at a 75-ohm load. Circuits using Type GT-338 avalanche transistors are characterized by high temperature stability. 7 ill. 12 ref. Summary.

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UDC: 621.382.3

USSR

D'YAKONOV, V. P., BOSYY, V. I., KOSTRYUKOV, A. S., and TSIGANKOV, V. A.

"Parameters and Characteristics of Special Avalanche Transistors"

Leningrad, Priborostroyeniye, No 6, 1972, pp 5-10

Abstract: The special avalanche transistors discussed in this paper are of the GT338 type, with very high-speed operation, now being mass produced in the Soviet Union. They have already been used in electronic measuring devices such as the stroboscopic oscillographs Sl-45 and Sl-60, and the block Sl-15/8 for use in the oscillograph Sl-15. The transistors are germanium diffusion-alloyed mesoepitaxial high-frequency p-n-p-p⁺ devices which, in relaxation circuits, form pulses with a rise time of less than 1 ns and an amplitude of up to 15 volts on a 75-ohm load. They can be used in fast pulse and logic circuits, in rapid-operation computers, in nuclear and quantum electronics, in fast optical-electronic circuits, and the like. Specifications as well as details of the construction of these devices are given together with circuit diagrams indicating possible applications. The authors are associated with the Smolensk Branch of the Moscow Power Institute.

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1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--RELATION BETWEEN THE ENERGY OF ALKALI HALIDE CRYSTAL LATTICES AND
THE TEMPERATURE CHANGES IN YOUNG'S MODULUS -U-
AUTHOR--BUTAKI, A.A. B
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 128-9
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--YOUNG MODULUS, CRYSTAL LATTICE STRUCTURE, THERMAL EFFECT,
SODIUM CHLORIDE, SODIUM BROMIDE, POTASSIUM CHLORIDE, POTASSIUM BROMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/1909

STEP NO--UR/0139/70/013/002/0128/0129

CIRC ACCESSION NO--AT0114349

UNCLASSIFIED

2/2 016
CIRC ACCESSION NG--AT0114349

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMULA U EQUALS MINUS 6.70
TIMES 10 PRIME NEGATIVE 3 (DE-DT) PLUS 5.20 TIMES 10 PRIMES, WHERE U IS
THE ENERGY OF ALKALI HALIDE CRYSTAL LATTICE (J-KILOMOLE) AND DE-DT IS
TEMP. CHANGE OF YOUNG'S MODULUS, WAS DEVELOPED. THIS FORMULA IS APPLIED
TO THE NaCl MINUS NaBr AND KCl MINUS KBr SOLID SOLNS. TO CALC. THE
ENERGY OF THE CRYSTAL LATTICE. FACILITY: TOMSK. POLITEKH. INST.
IM. KIROVA., TOMSK, USSR.

UNCLASSIFIED

1/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--CHANGES WITH TEMPERATURE OF THE ELASTIC PROPERTIES OF SODIUM
BROMIDE SINGLE CRYSTALS -U-

AUTHOR--(02)--NOVIKOV, YE.N., BOITAKI, A.A.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 139-41

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--THERMAL EFFECT, ELASTIC MODULUS, SODIUM BROMIDE, SINGLE
CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1782

STEP NO--UR/0139/70/013/002/0139/0141

CIRC ACCESSION NO--AT0115611

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0115611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELASTICITY CONSTS., THE ANISOTROPY
FACTOR, AND COMPRESSIBILITY OF NBR SINGLE CRYSTALS WERE DETD. EXPTL.
AND ARE GIVEN FOR 20 TEMPS. AT 293-573DEGREEK. FACILITY:
TOMSK. POLITEKH. INST. IM. KIROVA, TOMSK, USSR.

UNCLASSIFIED

USSR

UDC 517.927

BYKOV, Ya. V., BOZASHEV, A. I., Institute of Physics and Mathematics, Academy of Sciences, Kirgiz SSR

"Concerning Periodic Solutions of Systems of Difference Equations"

Frunze, *Investiya Akademii Nauk Kirgizskoy SSR*, No 3, May-June 1970, pp 11-13

Abstract: This study is closely related to a 1969 work by the authors on the existence and structure of periodic solutions of equations in terms of finite differences. In the present work an investigation is made of questions dealing with periodic solutions of systems of difference equations in terms of m -dimensional vectors and a square matrix. Just as in the above-mentioned study, extensive use is made of the structure of the image of a periodic vector.

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Welding

USSR

UDC 621.791.053.002.612:658.386

~~BOBIL'NIKOV, S. N.~~ NABEZHNOV, YU. I., AGAPOVA, N. P., PAL'CHUK, N. YU. (Candidates of Technical Sciences), PROKHOROV, V. I., REVIZNIKOV, L. I., BOBYLEV, A. P., KRASINA, T. A., KRYLOV, YE. A., BALASHOV, V. D., ZINCOVSKIY, V. I., SYCHEV, R. S. (Engineers)

"Effect of Irradiation on the Properties of Welds of High-Alloy Steels and Alloys"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 70, pp 4-6

Abstract: The effect of neutron irradiation on the short-term mechanical properties of basic metals and welds from OOKh16N15M38, OOKh16N15M38, and OAKh20N40B austenitic steels and LKh132BFR ferrite-martensite steel was investigated. The mechanical properties were determined on samples cut in the longitudinal direction from argon-arc welds using an infusible electrode. The samples were irradiated in the active zone of a reactor at about 100°C. The theoretical neutron flux density was 10^{15} neutron/cm². sec. Some samples received a dose of 2.8×10^{21} neutron/cm², while others received a dose of 4.3×10^{21} neutron/cm². The mechanical properties were determined on UMD-5 tensile testing machines at air temperatures of 20, 350, and 650°C.

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USSR

BOTINOV, S. N. et al, Svarochnoye Proizvodstvo, No 3, Mar 70, pp 4-6

Tests conducted at 20°C showed that strength properties of all samples increased after irradiation; plasticity decreased. The tensile and yield strengths of weld metals with an austenitic structure increased to a lesser degree than those of the base metals. The mechanical properties of all samples at 350°C did not differ from those of the base metals. A decrease in tensile and yield strength with a simultaneous decrease in plasticity was observed in samples with an austenitic structure in tests conducted at 650°C. These decreases were especially noticeable in irradiated samples made from 40% Ni steel. The possible cause of the sharp decline in the intergrain strength and plasticity observed at 650°C in the irradiated metal with high nickel content is suggested. Orig. art. has: 2 figures, 4 tables, and 5 references.

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Aerosols

USSR

UDC 532.529.6

GOLUB, S. I., ROZEN, A. M., VAYSBLAT, M. B., and BOTINTSEVA, T. I.,

"The Height to Which Liquid Droplets are Raised in a Vertical Gas Flow"

Moscow, Teoreticheskiy Osnovy Khimicheskoy Tekhnologii, Vol 6, No 3,
May/Jun 72, pp 484-490

Abstract: Equations are derived for computing the height to which droplets formed in bubbling operations are raised in a vertical gas flow, and the effects of some parameters on this height are analyzed. The droplet path can be divided into two regions -- one in which the droplet moves faster than the gas flow and one in which its velocity is lower than the gas flow velocity. The equations relate droplet mass, the vertical component of the droplet's absolute velocity, resistance of the medium, droplet diameter, specific weights of liquid and vapor, relative drop velocity, hydraulic resistance, and gas flow velocity. The dependence of maximum height on droplet diameter is analyzed. Computer analysis of the equations demonstrated that when initial droplet velocity is higher than vapor velocity, the final height increases with increasing droplet diameter, while in the reverse case the final height increases with decreasing droplet diameter. Changes in medium density from 0.05 to 1.3 kg/m³ have little effect on height. The

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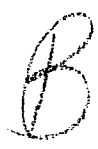
GOLUB, S. I., et al., Teoreticheskiy Osnovy Khimicheskoy Tekhnologii,
Vol 6, No 3, May/ Jun 72, pp 484-490

analysis assumes sphericity of the droplets and neglects the buoyancy of the carrier gas.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF A STOICHIOMETRIC DEVIATION ON THE CRYSTAL STRUCTURE OF
CADMIUM SELENIDE THIN FILMS -U-
AUTHOR--(04)--SHALIMOVA, K.V., DMITRIYEV, V.A., ROGGE, K., BOTNEV, A.F.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 342-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--CADMIUM SELENIDE, METAL FILM, METAL VAPOR, SELENIUM, THERMAL
EFFECT, CRYSTAL STRUCTURE
CTRLG MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1569 STEP NO--UR/0070/70/015/002/0342/0345
CIRC ACCESSION NO--AP0125195
UNCLASSIFIED



2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF STOICHIOMETRY ON THE CRYSTAL STRUCTURE OF CDSE FILMS, 0.1-3 MU THICK, EVAPD. IN VACUO ONTO GLASS SUBSTRATES AT 90-455DEGREES WAS STUDIED. THE INFLUENCE OF THE HEAT TREATMENT IN CD OR SE VAPORS, AT 250-450DEGREES, AND THE SIMULTANEOUS EVAPN. OF CDSE PLUS SE OR CDSE PLUS CD ON THE FILM PROPERTIES WAS ALSO STUDIED; EXCESS CD AND SE CAUSES THE FORMATION OF THE HEXAGONAL AND CUBIC PHASE, RESP. OPERATING CONDITIONS ARE GIVEN FOR THE PRODUCTION OF THE SINGLE PHASE FILMS. FACILITY: MOSK. ENERG. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--INITIATED THERMAL DESTRUCTIVE HYDROGENATION OF BIPHENYL -U-
AUTHOR--BOTNIKOV, M.YA., GONIKBERG, M.G.
COUNTRY OF INFO--USSR *B*
SOURCE--NEFTEKHIMIYA 1970, 10(1), 3-6
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGENATION, THERMAL DEGRADATION, BENZENE DERIVATIVE,
CHEMICAL BONDING, CHEMICAL REACTION MECHANISM, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1225 STEP NO--UR/0204/70/010/001/0003/0006

CIRC ACCESSION NO--AP0104591
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDROGENATION OF BIPHENYL (I) AT ELEVATED TEMPS. IS ACCELERATED BY THE PRESENCE OF COMPS. WITH LOWER BOND DISSOCN. ENERGIES THAN THOSE OF I. DIBENZYL (II) WAS ESP. EFFECTIVE. WHEN A MIXT. CONTG. I AT 2.5 ATM, H AT 30 ATM, AND C SUB6 H SUR6 AND 15 ATM WAS ALLOWED TO REACT AT 600DEGREES 24 SEC, 4PERCENT OF I WAS HYDROGENATED. THE EFFECT OF ADDITIVES WAS AS FOLLOWS (ADDITIVE, MOLE PERCENT OF ADDITIVE, AND PERCENT CONVERSION OF I GIVEN): II, 5.0, 32.5; ISO-PRPH (III), 5.0, 17.6; N,HEPTANE (IV), 2.6, 6.7; IV, 5.0, 11.1; IV, 10.0, 10.8. THE EFFECTS WERE ALSO OBSERVED AT 625DEGREES AND 650DEGREES, WHERE IN THE ABSENCE OF ADDITIVES THE CONVERSIONS WERE 12 AND 25PERCENT, RESP. II AT SIMILAR TO 5 MOLE PERCENT INCREASED THESE RATES TO 41.5 AND 44.5PERCENT, RESP. II AT 575DEGREES SHOWS A RAPID INCREASE IN EFFECTIVENESS UP TO 2.5PERCENT II WITH ONLY SLIGHT INCREASES IN CONVERSION OF I WHEN II WAS FURTHER INCREASED TO 25PERCENT. CONVERSION DATA ARE ALSO GIVEN AT 550DEGREES FOR II AND IV AND AT 650DEGREES FOR III AND IV. THE DATA ARE CONSISTENT WITH A PADICAL CHAIN REACTION MECHANISM.

UNCLASSIFIED

USSR

UDC: 537.312.62

BOTOSHAN, N. I., MOSKALENKO, V. A., and URSU, A. M.

"Investigating the Densities of the Electronic States of a Two-Zone Superconductor With a Paramagnetic Impurity"

Kishinev, V sb. Issled. po kvant. teorii sistem mnogikh chastits
(Investigating Systems of Many Particles by the Quantum Theory)
1971, pp 70-77 (from RZh--Radiotekhnika, No 4, 1972, Abstract No 4D493)

Translation: An investigation is made of the densities of the electronic states of a two-zone superconductor with a low concentration of paramagnetic impurity in a broad frequency interval. The frequency Ω_1 at which the densities of the electronic states have a maximum, as well as the values of these maxima, is determined. Bibliography of 10. Resume

1/1

USSR

UDC: 537.312.62

BOGOSHAN, N. I., GABARADZHIU, V. F., and MASKALENKO, V. A.

"Investigating the Densities of the States of a Two-Zone Superconductor With a Nonmagnetic Impurity"

Kishinev, V sb. Issled. po kvant. teorii sistem mnogich chastits
(Investigating Systems of Many Particles by the Quantum Theory)
1971, pp 18-26 (from RZh--Radiotekhnika, No 4, 1972, Abstract No 4D485)

Translation: Calculations are made of the densities of the electronic states of a two-zone superconductor with a nonmagnetic impurity in the entire frequency interval in the two limiting case of small and large impurity concentrations. The frequency Ω_n , at which the densities of the electronic states of the zone electrons have a maximum, as well as the values of these maxima, is determined. Two illustrations, bibliography of five. Resume

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1/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ABSORPTION OF LIGHT BY A TWO ZONE SUPERCONDUCTOR -U-

AUTHOR--(02)-BOTOSHAN, N.I., MOSKALENKO, V.A. *B*

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NR 3, PP
383-398

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LIGHT ABSORPTION, SUPERCONDUCTOR, ALTERNATING MAGNETIC FIELD,
ABSORPTION COEFFICIENT, PARAMAGNETIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1985/2027

STEP NO--UR/0646/70/002/003/0383/0398

CIRC ACCESSION NO--AP0102056

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0102056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BEHAVIOUR OF TWO ZONE
SUPERCONDUCTOR WITH PARAMAGNETIC ADMIXTURE IN A CHANGING MAGNETIC FIELD
IS INVESTIGATED. THE ABSORPTION COEFFICIENT OF LIGHT BY TWO ZONE
SUPERCONDUCTOR WITH NON MAGNETIC ADMIXTURE IS OBTAINED IN THE CASE OF
ZERO TEMPERATURE AND HIGH ADMIXTURE CONCENTRATION.

UNCLASSIFIED

Organophosphorous Compounds

USSR

UDC 541.621'49:546.733'18'86:547.442.2

ABLOV, A. V., BOTCHANSKIY, M. M., SIMONOV, YU. A., MALINOVSKIY, T. I., GOL'DMAN, A. M., and BOLOGA, O. A., Institute of Applied Physics, Academy of Sciences USSR, Institute of the Chemistry, Academy of Sciences USSR, Kishinev

"A New Kind of Stereoisomerism in trans-Dioximines of Cobalt (III) With Triphenylphosphine and Triphenylstibine"

Moscow, Doklady Akademii Nauk SSSR, Vol 206, No 4, Oct 72, pp 863-865

Abstract: In an earlier publication it was reported that triphenylphosphine, triphenylarsine, and triphenylstibine can easily replace water in trans-acidoaquadioximines of cobalt (III) forming compounds $[CoX(DH)_2EPh_3]$

where X = Cl, Br, or I, and E = P, As or Sb. Furthermore, it was shown that these products occur as mixtures of two modifications. This paper covers x-ray diffraction studies of such compounds. The experimental results obtained show that cobalt (III) dioximines exhibit an unique case of stereoisomerism. Both modifications are in trans-configuration; in one case two chelate units DH are located in a plane, in the other the DH chelate planes are at an angle to each other, the cobalt atom being moved out of the center of the octahedron.

1/1

USSR

UDC 681.3.06:51

BOTOVA, R. F., YEZHQVA, E. A., ZALIZNYAK, M. A., RODINOVA, L. A., CHERKASHNEYA, K.

"Translator for the "ARAGATs" Computer"

Uch. Zap. Perm. Un-t, [Scientific Writings of Perm' University], 1970, No 220, pp 149-160, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V642, unsigned).

Translation: The translator for the "ARAGATs" computer is based on the TA-1 translator for the M-20 computer. The input language is ALGOL-60 with some limitations.

1/1

USSR

UDC 615.355.099

PRIPUTINA, L. S., OEBARIUS, I. D., BOTSMAN, N. YE., GNATYUK, V. N., and SVETLAYA, G. V., Laboratory for the Investigation of Food Additives, Kiev Scientific Research Institute of Nutritional Hygiene

"Determination of the Toxicity of Enzymatic Preparations of Microbial Origin Designed for Use in the Food Industry"

Moscow, Voprosy Pitaniya, No 6, Nov/Dec 71, pp 43-48

Abstract: The amylolytic preparation Nigrin SR, made from *Asp. niger* strain EU-119 and used in the production of juices and nonalcoholic beverages, and a second enzymatic preparation, made from *Asp. oryzae* strain 476-I and used in brewing of beer, were tested on white rats and ducklings. The preparations caused a reduction in serum antibodies, an increase in the relative weight of the liver, a decrease in the DNA phosphorus concentration in the liver, changes in liver glycogen content, hyperemia of the spleen, hyperplasia of lymphatic tissues, and degenerative changes in the liver and other organs. The disorders are ascribed to the presence of the fungi's metabolic products and unidentified fluorescent substances in the preparations. It is concluded that the Nigrin SR preparation may be used after purification by the method described.

1/1

USSR

UDC: 532.542

BOTUK, B. O., KAL'FA, V. S.

"Some Simplifications in the Solution of Problems of the Nonuniform Motion of a Liquid in Tubes of Circular Cross Section"

Gidravlika i gidrotekhn. Resp. mezhved. nauch.-tekhn. sb. (Hydraulics and Hydraulic Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 11, pp 24-28 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B574)

Translation: The paper outlines some procedures for determining the critical depth h_{cr} in tubes of circular cross section; a simplified formula is proposed for determining h_{cr} with sufficient accuracy for practical purposes. A new method is presented for integrating the equation of nonuniform motion for circular prismatic pipelines with the use of a linear relationship between the relative flow characteristics and relative filling of the cross section of the pipeline. A relationship is given for determining the change in the coefficient of kinetic energy. Integration of the equation of nonuniform motion in a prismatic channel of circular cross section is illustrated by an example. Authors' abstract.
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USSR

UDC [621.362:538.4]:621.565.001.24

BELODED, M.I., BOTUK, YU.S., GUTMAN, I.I., ZUBATOV, N.G., TETELBAUM, S.D.

"Thermodynamic Analysis Of Some Schemes For A Magnetohydrodynamic Installation With An Energy Exchanger"

V sb. Teplotekhn. probl. priyemno preobrazov. energii (Heat-Engineering Problems Of Direct Energy Conversion Collection Of Works). Issue 2, Kiev, "Nauk. dumka," 1971, pp 44-52 (from Nauk. Elektron. Informats. i Energ. Tekhn. No. 1, Nov. 1971. Abstract No 12A178)

Translation: A comparative analysis is presented of a scheme for a magnetohydrodynamic (MHD) installation in which, after a preliminary regenerative heating of the air to 1100--1300° K (which can be accomplished in actual available heat exchange apparatus of the recuperative type), a subsequent increase of the temperature to the level of 1700--2000° K takes place in the energy exchanger "air--air," and of an ordinary scheme of a MHD installation in which high-temperature heating of the air is conditionally assumed possible. The values of the efficiency obtained for a scheme with an energy exchanger "air--air" is 54.7 percent; without an energy exchanger, 55.9 percent. A thermodynamic analysis and optimization are presented. A conclusion is made concerning the prospects of schemes with energy exchangers with low-temperature heating of air. 3 ill. 3 ref. [Odessa Technological Institute] V.P. Bogatyrev

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USSR

UDC [621.362:538.4]: 621.565.001.24

BELODED, M.I., BOTUK, YU.S., GUTMAN, I.I., ZUBATOV, N.G., TETEL'BAUM, S.D.

"Direct Energy Exchange And Its Application To Magnetohydrodynamic Installations"

V sb. Teplotekhn. probl. pryamogo preobrazov. energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 37-44 (from RZh--Elektrotehnika i energetika, No 12, Dec 1971, Abstract No 12A177)

Translation: The scheme of the device is presented and the operation is considered of a tubular energy exchanger which assures a direct energy exchange between the working media and which makes it possible to exclude from the thermal scheme of an open-cycle magnetohydrodynamic (MHD) installation the high-temperature stage air heater. The computations show that with the aid of such an energy exchanger it is possible to increase the air temperature by 200--700° K. The range of air pressures at the output of the energy exchanger satisfies the condition of operation of the open-cycle MHD installation, and the theoretical efficiency of the energy exchanger reaches a magnitude of 0.9. 2 ill. 2 ref. [Odessa Technological Institute] V.P. Bogatyrev

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USSR

UDC 669:539.3

IVANOVA, V. S., and BQTVINA, L. R., Moscow

"Problem of Strength and Prediction of Mechanical Properties of Metals"

Moscow, Akademiya Nauk SSSR, Izvestiya. Metally, No 6, Nov-Dec 72, pp 26-33

Abstract: A study is made of the behavior of metals from the viewpoint of physical chemistry and solid mechanics, and questions of forecasting these properties are considered. A universal diagram, based on the principal mechanical properties of metal that determine its performance under different conditions of loading, is presented and formulas for the calculation of failure viscosity and strength characteristics are offered. The authors are of the opinion that further experimental data is necessary to substantiate the correctness of the estimated and experimental values of these relationships.

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USSR

UDC 539.4.011

IVANOVA, V. S., and BOTVINA, L. R., Moscow

"Common Regularity in the Change of Mechanical Properties of Metals and Alloys under Different Load Conditions"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 43-53

Abstract: The critical condition of metals and alloys by transition from one stress type to another is investigated, taking into account the destruction stages of reversible, irreversible, and catastrophic damages, corresponding to the development of submicroscopic continuity disturbance, micro-cracks, or cracks of critical length, respectively. A clearly defined dependence in the transition zone was established of all mechanical properties on load conditions and other factors, conditional to the abrupt drop of the energy capacity of the metal by transition from the plane-stressed to the plane-deformed condition. Under plane-deformation conditions, the fracture toughness on the top of cracks is minimum and proportional to the latent heat of fusion, according to $(G_{lc})_{min} = L_m \Delta_{lc}$, where Δ_{lc} = linear dimension of the stable nucleus of the crack under micro-separation conditions. The $(G_{lc})_{min}$ value can be determined from corrosion tests under stress condition by the value of the limiting

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USSR

IVANOVA, V. S., and BOIVINA, L. R., Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 43-53

stress intensity coefficient $(K_{Ic})_{min}$. The established regularity in the change of mechanical properties, depending on external actions, serves as basis for predicting the mechanical properties of materials under different load conditions. Twelve figures, one table, 23 bibliographic references.

2/2

USSR

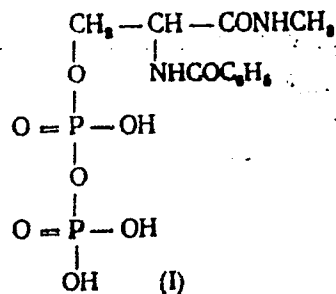
UDC: 547.466

AVAYEVA, S.M., RAS'KOVA, N.V., BOTVINIK, M.M., Laboratory of Bio-Organic Chemistry .
Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and
Secondary Specialized Education RSFSR

"Hydrolysis of N-Benzoyl-O-Pyrophosphoserine Methylamide"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/
Feb 70, pp 96-99

Abstract: The authors investigated the limits of stability of N-benzoyl-O-
pyrophosphoserine methylamide

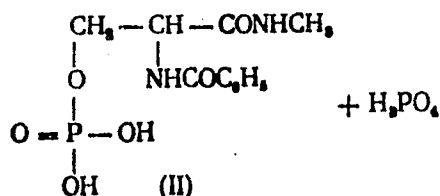


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USSR

AVAYEVA, S.M., et al, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 96-99

at various pH values and studied hydrolysis of the compound in the presence of a number of metal ions. It was found that the pyrophosphoric bond in compound (I) is stable for 4 hrs at 50°C for pH of 2-11, but is readily hydrolyzed in an acid solution. Analysis of the reaction products showed only N-benzoyl-O-phosphoserine (II) and phosphoric acid:



It was found that a change in the structure of the serine part of the pyrophosphoric acid ester has practically no effect on the stability of the pyrophosphoric bond. The rate of hydrolysis of the bond increases appreciably in a neutral medium (pH - 7) in the presence of a number of metal ions -thorium, cerium, lanthanum and iron which act as catalysts. Catalytic hydrolysis at pH values other than

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USSR

AVAYEVA, S.M., ET AL, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, .
No 1, Jan/Feb 70, pp 96-99

7 was not as great. Hydrolysis of the compound is not catalyzed at pH 4, 7 and 9 by magnesium, manganese, cobalt, calcium, beryllium or nickel ions. It was also found that only the pyrophosphoric bond is decomposed by hydrolysis at pH 7 in the presence of thorium or iron ions.

3/3

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INHIBITION OF ALPHA CHYMOTRYPSIN BY ISOAMYL CHLOROMETHYL KETONE -U-

AUTHOR--(02)-BOTVINIK, M.M., DYAKOV, V.L.

COUNTRY OF INFO--USSR

SOURCE--BEIKHIMIYA 1970, 35(1), 27-30

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRYPSIN, ENZYME ACTIVITY, INHIBITION, CHLORINATED ORGANIC
COMPOUND, KETONE, HYDROGEN ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0009

STEP NO--UR/0218/70/035/001/0027/0030

CIRC ACCESSION NO--AP0105109

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOAMYL CHLOROMETHYL KETONE

INHIBITED ALPHA CHYMOTRYPSIN BY 97PERCENT WHEN

N,CARBOBENZYOXY,DL,PHENYLALANINE P,NITROPHENYL ESTER WAS SUBSTRATE AND 92.3-95.2PERCENT WHEN P,NITROPHENYL ACETATE WAS SUBSTRATE AT PH 7.7; NO SUCH INHIBITION WAS OBSD. AT PH 5.0. FURTHER EXPTS. INDICATED THAT INACTIVATION BY KETONE RESULTED FROM ALKYLATION OF THE IMIDAZOLE RING OF

THE HISTIDINE-57 RESIDUE. PHENOXYMETHYL CHLOROMETHYL KETONE WAS AS

ACTIVE AN INHIBITOR OF ALPHA CHYMOTRYPSIN AS ISOAMYL CHLOROMETHYL KETONE, WHEREAS L,1,TOSYLAMIDO,2,PHENYLETHYL CHLOROMETHYL KETONE WAS PRACTICALLY INACTIVE.

FACILITY: LAB. BIOORG. CHEM., MOSCOW

STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

AP9023393

1AA 6/69

UR 0421

A69-25487 #

FIVE PROBLEMS CONCERNING THE EFFECT OF A SOLID
SCREEN ON THE APPARENT MASS OF FLOATING CYLINDRICAL
BODIES DURING A VERTICAL IMPACT [PLAT' ZADACH O
VLIANII TVERDOGO EKRANA NA PRISOEDINENNUIU MASSU
PLAVAIUSHCHIKH TSILINDRICHESKIKH TEL PRI VERTIKAL'NOM
UDARE].

V. M. Botvinkov and A. M. Polunin.

Akademiia Nauk SSSR, Izvestiia, Mekhanika Zhidkosti i Gaza,

Jan. - Feb. 1969, p. 124-129. 6 refs. In Russian.

Discussion of the influence of the channel wall on the gain of the
apparent mass of floating elliptical and cylindrical bodies subjected
to vertical impact. The problems considered involve horizontally
and vertically oriented ellipses floating in conical channels, and
cylinders floating (1) eccentrically in a semicylindrical vessel,
(2) near the vertical wall, and (3) near an immovable cylinder.

G. R. }

69

2/5

29

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1932 0409

USSR

UDC: 621.374.5(088.8)

BOTVINNIK, A. Ye., PAVLOV, V. G., Moscow Electrical Engineering Institute of Communications

"A Device for Regulating the Transmission Ratio of Continuous Signals"

USSR Author's Certificate No 262189, filed 18 Oct 68, published 27 May 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G247 P)

Translation: This Author's Certificate introduces a device for regulating the transmission ratio of continuous signals. The device contains a controlled element and a threshold element. To improve control of continuous signals while simultaneously simplifying the device, a network made up of a slave pulse oscillator, a resettable counter and a flip-flop connected in series is connected between the output of the threshold element and the controlling element of the controlled circuit. The controlling inputs of the counter and flip-flop are connected to the output of the reset pulse oscillator.

1/1

BOTVINNIK, L. K.

SO:SPRS 54539

23 NOV 71

CHRONIC PROGRESSIVE LUNG DISEASE AS A REGIONAL PATHOLOGY IN SOME NORTH-EASTERN PARTS OF THE USSR

Article by A. P. AVERAN, R. I. BERG, L. K. BOTVINNIK, A. A. ZHAVORONKOV, L. I. KENIG, A. G. KATCHEV, V. S. GUMILEV, Institute of Normal Morphology of the USSR Academy of Medical Sciences, Moscow, Puzdanskaya Oblast Hospital, Moscow, Venerik Akademii Meditsinskikh Nauk SSSR, Russian, No 10, 1971, pp 1-14

At the present time, the attention of pathologists and clinicians is being drawn more and more to chronic progressive diseases of the lungs resulting in fibrosis and emphysema. For many years, chiefly in England, they were called chronic bronchitis which, since the times of Bedham (1825), has been considered practically a traditional English disease. It is not by chance that Stokes (1837) in his classical textbook on thoracic pathology devoted much more attention to it than to tuberculosis. English researchers have authored many works dealing with the epidemiology, x-ray diagnosis, and possible etiology of chronic bronchitis. Its traditional link with the humid climate of the British Isles, vaccination of the disease during the cold season have become firmly fixed in the consciousness of many physicians.

A comprehensive monograph dealing with chronic bronchitis has been published by a team of English physicians and edited by Oswald (1954). This author demonstrated, in particular, that in England and Wales, 30,000 people died of bronchitis in 1953, which constituted 7 percent of all causes of death. To this we should add 21,000 deaths due to pneumonia, 2,000 deaths due to bronchiectasis, and 3,000 deaths because of asthma. It is not by chance that we compare these indices, since bronchitis, asthma, bronchiectasis, as well as emphysema are often combined, and it is only the chief clinical syndrome that makes it possible to separate them into different categories.

The incidence of chronic bronchitis is described in contradictory ways. However, there is no doubt that under specific climate conditions this disease could be one of the chief causes of disability. Evidently, the sickness begins at an early age (20-30 years), but most deaths are referable to the elderly and aged (Oswald). Among its victims there is prevalence of individuals in specific professions, but metallurgical, transportation, and communications workers are stricken particularly often. In England, bronchitis does not spare agricultural workers, unskilled laborers, and representatives of other occupational groups.

USSR

UDC 621.317.761(088.8)

BOGDANOV, S. YE., SPICHENKOV, M. P., REZNIK, L. YE., BOTVINNIKOV, V. I.

"Device for Measuring the Carrier Frequencies of Shortwave AM Signals"

USSR Author's Certificate No 275223, Filed 16 Dec 68, Published 13 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A289P)

Translation: A device containing a professional superheterodyne receiver and an electronic counter is proposed for measuring the carrier frequencies of shortwave AM signals. It is distinguished by the fact that for automation and improvement of the operation of the measurement process the heterodyne outputs, the second intermediate-frequency amplifier of the receiver and one of the outputs of the standard oscillator are connected to the frequency conversion unit. The second output of the oscillator is connected to the automatic control unit by a counter comprised of a control circuit, divider, and valve, to the second input of which the signal is fed from the frequency conversion unit.

1/1

BOTVINOV, A. M.

MEDICINE

SO:JPRS 53658

22 July 1971

UDC: 616-082(-22):65

FORMS AND METHODS OF MANAGEMENT OF RURAL THERAPEUTIC INSTITUTIONS

[Article* by A. M. Botvinov, Candidate of Medical Sciences, Head Physician of Stanohelevskiy Rayon, Donetskaya Oblast; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 6, 1971, submitted 14 December 1970, pp 8-12]

The modern central rayon hospital is the main link in the system of rural public health services, it is the center for specialized medical care for the local population, and the organizational and methodological headquarters for the public health services of the rayon. Of course, organization of therapeutic and prophylactic care depends, in many respects, on rational management of the central rayon hospital and of other therapeutic institutions.

We use the organizational methods defined in the statute on central rayon hospitals, orders of the USSR and Ukrainian ministries of health; we have also taken considerable advantage of the experience of the Donetskaya Oblast Central Clinical Hospital and other institutions in the oblast and republic.

We believe the following to be the most important elements in organizing management: creation of a standard system for operating a central rayon hospital, district hospitals, feldsher-midwife stations and creches, precise definition and awareness of the duties of all workers, strict supervision over the work of subordinate links, proper organization of advanced training of all medical personnel, adoption of innovations and R&D (scientific organization of labor) in the work of therapeutic institutions.

Without a strict system of management it is impossible to deal with all of the problems that require constant attention, nor can one follow through the fulfillment of decisions and orders of superior agencies or one's own decisions.

In our rayon, a unified strict system was established in all of the therapeutic institutions, and it is being improved continuously. We plan

*Published for the purpose of discussion.

Polymers and Polymerization

USSR

UDC 678.744.422-19:546.98

SHVETS, T. M., MIKHALYUK, S. A., MEL'NICHENKO, Z. M., BOTVINOV, V. A., and
ARYUPINA, K. A., Institute of Colloidal Chemistry and Chemistry of Water,
Acad. Sc. UkrSSR

"Electroconductivity of Metallopolymers Based on the Alloy Fe-Co-Ni and the
Copolymers of Vinyl Chloride With Vinyl Acetate"

Kiyev, Ukrainskii Khimicheskii Zhurnal, Vol 39, No 3, Mar 73, pp 258-261

Abstract: Experimental data have been reported on the value of electrocon-
ductivity in relationship to the nature of polymer, composition of metallo-
polymer, and the temperature of treatment of the metallopolymer obtained by
electrolytic method from the alloys consisting of iron-cobalt-nickel and
copolymers of vinyl chloride with vinyl acetate. It has been shown that
the electroconductivity depends on the composition of the metallopolymers
and on the temperature of preliminary treatment.

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1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--CHROMATOGRAPHIC DETERMINATION OF HEXAMETHYLENEDIAMINE IN WATER -U-

AUTHOR--DYATLOVITSKAYA, F.G., BOIVINOVA, L.YE.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 64-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR, BIOLOGICAL
AND MEDICAL SCIENCES

TOPIC TAGS--HEXAMETHYLENEDIAMINE, CHROMATOGRAPHY, WATER, WASTE TREATMENT,
SYNTHETIC FIBER, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1984/1634

STEP NO--UR/0183/70/000/001/0064/0066

CIRC ACCESSION NO--AP0100244

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEXAMETHYLENEDIAMINE (I) IN WATER FROM NATURAL SOURCES WAS DETD. BY MEANS OF THE FOLLOWING PROCEDURE: EVAP. 0.5L WATER SAMPLE IN VACUUM AT 30-40DEGREES TO 0.5 ML. APPLY THE RESIDUE TO THIN LAYER OF ANHYD. AL SUB2 O SUB3 (1-1.5 NM LAYER ON GLASS PLATE 8 TIMES 12 CM). DRY 30 MIN IN AIR AND DEVELOP WITH N-BUOH-ACOH-H SUB2 O MIXT. USE NINHYDRIN AGENT WITH CUSO SUB4 ADDN. FOR THE DETECTION AND INCUBATE FOR 15 MIN AT 110DEGREES. ELUTE WITH MEQH AND MEASURE THE ABSORBANCE AT 584 MMU. READ I CONC. FROM A CALIBRATION CURVE. SENSITIVITY IS SIMILAR TO 0.02 MG I-1., RELATIVE ERROR SIMILAR TO 2.8-8.2PERCENT. THE SAME PROCEDURE WAS USED FOR THE DETN. OF I IN CONCD. INDUSTRIAL WASTE WATERS FROM SYNTHETIC FIBER PRODUCTION, BUT THE WATER SAMPLE (0.05-1 ML) WAS APPLIED DIRECTLY TO AL SUB2 O SUB3 PLATES. SENSITIVITY IS 0.02 MG I, REPRODUCIBILITY 2.6-8.2PERCENT, THE DETN. TAKES 1.5-2HR. SAMPLES CONSISTING OF INDUSTRIAL WASTE WATER IN MIXT. WITH THE SEWAGE WATER FROM HOUSEHOLDS CONTAIN I AND AMINO ACIDS (BEFORE BIOL. TREATMENT). A MODIFIED PAPER CHROMATOGRAPHIC PROCEDURE WAS USED: EVAP. 10-15 ML OF FILTERED WASTE WATER SAMPLE IN WEAKLY ACIDIC MEDIUM TO 0.5 ML, APPLY THE RESIDUE TO CHROMATOGRAPHIC PAPER, DEVELOP WITH PROH-NH SUB3-H SUB2 O MIXT. (4:1:1), SPRAY WITH 0.2PERCENT NINHYDRIN SOLN. IN ME SUB2 CO AND INCUBATE FOR 15 MIN AT 80-90DEGREES. ELUTE I SPOTS WITH 5 ML H SUB2 O AND MEASURE THE ABSORBANCE WITH A YELLOW FILTER. PREP. A CALIBRATION CURVE FOR SOLNS. CONTG. 0.005-0.2 MG I, SENSITIVITY SIMILAR TO 0.005 MG I.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--GLUCOCORTICOID FUNCTION OF THE ADRENAL CORTEX IN PREMATURE CHILDREN
SUFFERING FROM SEPSIS -U-
AUTHOR-(03)-GERASKINA, V.P., LEBEDEV, V.P., BOTVINYEV, O.B.
COUNTRY OF INFO--USSR
SOURCE--VGP OKHR MATERIN DET 15(1): 23-27. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ADRENAL CORTEX, POISON EFFECT, BLOOD PLASMA, HYDROCORTISONE,
CORTICOSTEROID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3009/0168 STEP NO--UR/0608/70/015/001/0023/0027
CIRC ACCESSION NO--AP0139031
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139031

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FLUOROMETRIC METHOD OF TOTAL DETERMINATION OF 11-OCS (11, OXYCORTICOSTEROIDS) IN THE BLOOD PLASMA AND THE METHOD OF SEPARATE DETERMINATION OF HYDROCORTISONE AND CORTICOSTERONE BY COLUMN CHROMATOGRAPHY ON SILICAGEL WAS USED. IN SEPSIS OF PREMATURE CHILDREN THERE WAS A SINGLE TYPE OF REACTION EXHAUSTION OF ADRENAL CORTEX, CHARACTERIZED BY A LOW PRODUCTION OF HYDROCORTISONE AND CORTICOSTERONE. RESTORATION OF THE ADRENAL CORTEX FUNCTION WAS EXPRESSED IN INCREASED GLUCOCORTICOSTEROID PRODUCTION. SEVERE SEPSIS WAS ACCOMPANIED BY COMPLETE EXHAUSTION OF THE CORTEX AND A MARKED REDUCTION OF THE 11-OCS LEVEL. FACILITY: DEP. HOSP. PEDIAT., N. I. PIROGOV 2ND MOSCOW MED. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.95

BOTVIN'YEVA, A. M.

"Conditions of Gas Chromatographic Analysis of Aptane"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilekt. zagrvaz-
neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp
34-37 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N502)

Translation: It is demonstrated that good separation of aptane and solvent
can be achieved by using C_6H_6 or isooctane as the solvent in a column filled
with silanized chromotone with 10% polyethyleneglycol 20 M or silanized celite
545 with 10% Ye-301 silicone in the Tsvet-5 chromatograph.

1/1

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USSR

UDC 632.95

BOTVIN'YEVA, A. M.

"Method of Chlorophos Determination in Milk by Thin Layer Chromatography"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Transaction of the Second All-Union Conference on the Study of Pesticide Residues and Prevention of Their Contamination of Food Products, Feeds and the External Environment), Tallinn, 1971, pp 133-135 (from RZh-Khimiya, No 13, Jul 72, Abstract No 138475)

Translation: Concentrated acid (HCl, AcOH etc.), 0.5 ml, 70-80 ml ether and 50 g Na_2SO_4 are added to 50 ml milk, stirred 5-7 min., and the extract is boiled down. Two milliliters of distilled water are added to the residue, heated for 1-2 min., cooled, and the aqueous extract filtered; the operation is repeated three times. The extract is washed with n-hexane (2 x 10 ml) and extracted with 3 x 15 ml CHCl_3 . The organic extract is dried over Na_2SO_4 and boiled down. The solution of the residue in ether is chromatographed on silica gel in an acetone-hexane system (1:1). It is developed with a solution of AgNO_3 in NH_4OH and acetone with subsequent UV irradiation. Determination sensitivity: 5 per sample.

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USSR

UDC 669.715.721.725.295.296.74.26.018.29(035.3

BELOUSOV, N. N., MIKHEYEVA, Ye. N., ZHOLOBOVA, Ye. P., KASHEVNIK, L. Ya.,
DODONOV, A. A., YEGOROVA, V. A., YEVSTRATOV, Yu. A., POPKOVA, V. A., BOTYANOVSKIY,
M. G.

"Aluminum-Based Casting Alloy"

USSR Author's Certificate, No. 253375, Filed, 19/06/67, Published, 8/10/70.
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5
1670P).

Translation: The alloy has the following composition (%): Mg 8-9.5, Be 0.05-0.15,
Ti 0.05-0.15, Zr 0.05-0.2, Mn 0.1-0.3, Cr 0.05-0.15, remainder Al. The alloy has
high technological properties, corrosion resistance, and stability of properties.
In the cast state, the alloy, when cast in a sand mold, has σ_b 18-23 kg/mm², δ 0.7
- 2.5%, α_H 0.2-0.4 kgm/cm²; when cast in a chill mold - σ_b 27-53 kg/mm², δ 4 -
12%, α_H 0.4 - 1.2 kgm/cm².

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1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CHROMATIC FIELD ABERRATIONS OF A QUADRUPOLE OBJECTIVE FOR A HIGHER
VOLTAGE ELECTRON MICROSCOPE -U-
AUTHOR--BOULENKO, A.P. **B**
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, OPTIKO-MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
13-17
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--CHROMATIC ABERRATION, MODEL, ELECTRON MICROSCOPE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1347 STEP NO--UR/0237/70/000/000/0013/0017
CIRC ACCESSION NO--AP0123305
~~UNCLASSIFIED~~

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0123305

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPRESSIONS ARE OBTAINED FOR COEFFICIENTS OF FIELD AND CHROMATIC ABERRATIONS OF AN INDIVIDUAL QUADRUPOLE AND A QUADRUPOLE OBJECTIVE. THE VALUES OF THESE COEFFICIENTS IN AN APPROXIMATION OF A RECTANGULAR FIELD MODEL ARE GIVEN IN THE FORMAT QUADRATURES AND GRAPHS.

UNCLASSIFIED

USSR

UDC: 621.372.85(088.8)

BOVA, N. T., KHRAMOV, V. A., Kiev Polytechnical Institute

"A Device for Automatically Matching a Load to a Transmission Line"

USSR Author's Certificate No 277894, filed 27 Sep 68, published 19 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B193 P)

Translation: The proposed device consists of a system of pickups, matching varactors and interconnected control elements. To reduce overall dimensions and weight, and to increase speed and reliability, the pickup system is made in the form of a number of coupling probes spaced with an interval of one-eighth wavelength. The matching varactors are connected in parallel in the line with a spacing of one-quarter wavelength.

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USSR

UDC: 621.372.061

BOVA, N. T. and KHRAMOV, V. A.

"Automating the Computations of Microwave Devices"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 13, No 12, 1970, pp 1488-1490

Abstract: The microwave devices referred to in this brief communication are semiconductors -- p-i-n diodes, varactors, and the like -- as well as ferrites, used for controlling the amplitude or phase of the microwave oscillations. The methods of automating their computations can be based on the methods for solving the problem of linear programming since electrical control devices for microwaves are linear systems with variable parameters. An example of the linear equations connecting incident and reflected waves for a four-terminal network equivalent to a series of cascaded individual elements is given. For their analysis of the computations such elements involve, the authors use the example of a phase-shifting device with four reactances. They also mention that the results they obtained in the automatic computation of a phase-shifting network with nine varactors, using the "Mir" electronic computer, agreed satisfactorily with the theoretical calculations.

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USSR

UDC: 621.372.2+681.3:51

BOVA, N. T. and TOLSTIKOV, Yu. V.

"Application of the Multiple Reflection Method to Computing Microwave Range Nodes with the Electronic Computer"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 13, No 11, 1970, pp 1297-1304

Abstract: This paper generalizes the results of an earlier paper (Bova, N. T., et al, Raschet odnorodnoy linii s proizvol'nym chislom sosredotochennykh neodnorodnostey -- Computation of Uniform Lines with an Arbitrary Number of Lumped Nonuniformities -- Izv. VUZ USSR--Radiotekhnika, 1962, 5, No 3, p 376) in which the nodecounting was considered from the point of view of a wave passing along a line with the multiple reflections between nonuniformities taken into account. The formulas obtained in the present paper are written in a form convenient for programming a computer. The authors consider the steady state in a line containing n nonuniformities, and make up an auxiliary matrix for further processing the results. To illustrate their methods, they discuss the practical problem of computing a uniform line containing n identical elements equidistant from each other. They claim for their method the advantage of being useful for transient as well as steadystate processes in microwave devices.

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Acc. Nr: **AP0049041**

Ref. Code: **URC357**

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr / ,
PP 19-23

**SOME PROBLEMS OF PATHOGENESIS AND TREATMENT OF OCULAR
HYPERTENSION IN CLIMACTERIUM**

Suprun, A.V.; Krymskaya, M.L.; Zmanovskiy, Yu.F.; Bove, M.V.

Summary

Results consecutive to dynamic examination of 40 women with climacteric syndrome and deranged regulation of the intraocular tension are reported. The follow-up time ranged from 2 to 7 years. Clinical and electrophysiological (EEG and REG) investigations furnished evidence that in 35 patients subcortical brain structures were involved in the pathological process with attendant changes in the cerebral circulation, commonly of functional nature. Pathogenetic treatment (sedative and hormonal therapy) contributed to the improvement of the general condition of patients and to the normalization of intraocular pressure in them. In 12 women symptoms of the climacteric

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19800825

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AP0049041

syndrome vanished, intraocular tension returned back to normal with no objective changes visible on the level of the eyes. Twenty women exhibited upset regulation of the intraocular pressure without any other signs of glaucoma, while in 8 others initial primary glaucoma was diagnosed. The authors conclude that, alongside manifestations of primary glaucoma, women with pathological climacterium may present specific disturbances of the intraocular pressure regulation without any other symptoms of glaucoma, these disturbances having a tendency towards involution. This condition is considered by them as ocular hypertension, appearing as a symptom of climacteric syndrome.

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19800826

1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ULTRA HIGH FREQUENCY PLASMA MULTIPLIER WITH EXTERNAL IGNITION -U-

AUTHOR--(04)-BRANDT, A.A., REZNIKOV, I.I., BOVIN, S.V., TIKHOMIROV, YU.V.

CCOUNTRY OF INFO--USSR

SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. (USSR), NO. 2, P. 235-6
(1970)

DATE PUBLISHED-----7C

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ULTRAHIGH FREQUENCY, PLASMA BEAM, FREQUENCY MULTIPLICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605029/D02 STEP NO--UR/0188/70/000/002/0235/0236

CIRC ACCESSION NO--AP0141716

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0141716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF MEASUREMENTS OF
PARAMETERS OF A PLASMA FREQUENCY MULTIPLIER WITH AN EXTERNAL DIRECT
CURRENT IGNITION. THE OUTPUT POWER AND HARMONIC CONTENT ARE
INVESTIGATED.

UNCLASSIFIED

USSR

UDC 517.949:534

BOVIN, V. A. and SAVIN, G. N., Dnepropetrovsk Engineering Construction
Institute; Institute of Mechanics, Academy of Sciences, Ukrainian SSR (Kiev)

"A New Method of Solving Some Discrete Problems in Mechanics"

Kiev, Prikladnaya Mekhanika, Vol 9, No 3, Mar 73, pp 10-20

Abstract: A new method of solving a number of discrete problems in mechanics is proposed, based upon the concept of homologous functions with the use of differential-calculus polynomials of the first kind. The method is discussed on the basis of the Lagrange problem of the normal mode of a stretched infinite string with discretely and regularly situated point masses. Central difference operators are used throughout the entire presentation; the problem can be generalized in specific ways. The obtained results show that the character of movement of such a string at any arbitrarily small, but finite distance between the masses is qualitatively different from that of a string with a continuously distributed mass. 5 references.

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USSR

UDC 621.762.2

KOZLOV, A. N., KRAVETSKIY, G. A., BOVINA, T. A.

"Effect of the Environment on the Composition and Microstructure of Spherical Refractory Metal Powder Obtained by the Plasma Atomization Method"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1971, vyp. 228, pp 139-148 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G400)

Translation: The environment has a noticeable effect on the composition and microstructure of powders obtained by plasma atomization. The Zr powders, the composition of which is similar to the composition of the initial wire, can be obtained by atomization of the Zr in a chamber filled with Ar with cooling of the powder particles in spindle oil. When combining atomization with chemical-heat treatment of the granule during the atomization process, it is possible to obtain Zr granules coated with a film of ZrO_2 (when atomizing in the air and cooling the granules in water). It is also possible to obtain carbide granules or granules with a surface carbide film when atomizing Mo and Zr in hydrocarbon vapors and cooling the granules in transformer oil. In order to obtain pure spherical Mo powder, it is recommended that the atomization take place in Ar and the granules be cooled in water. Six illustrations and a 5-entry bibliography.

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USSR

S.M. KOSYKH, D. N. KOSYKH, A. V. KOSYKH, and A. V. KOSYKH

"Investigation of the Possibilities of Improving the Wear-Resistance of Alloys"

Kiev, Avtomatizatsiya Stanka, No 10, Oct 76, pp 70-71

Abstract: Research conducted by the Institute for Problems of Metallurgy, Academy of Sciences USSR, on developing alloys for wear-resistant coatings based on chromium carbides and borides, is described. Four alloys were developed: KKH, KKH-2, KKH-19K, KH-15, and KKHKh. These alloys are wear-resistant. The purpose of the research was to determine the possibility of using the borides TiB₂, CrB, MoB, and WB as hardeners in the alloys. To improve the alloy characteristics, the borides were used in the type PZhM iron powder. To increase the wear-resistance of welded layers, the alloys were strengthened by the addition of 15% by volume of boron. The article is illustrated by photographs of the microstructure of a layer consisting of 20% TiB₂, 15% CrB, and 15% MoB. A table of various alloys and their relative wear-resistance after welding is also presented. The authors conclude that the addition of TiB₂ and CrB gives optimal results for strengthening steel surface welding.

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USSR

UDC: 681.332.65

DOLGOPOLOV, V. N., BOVKHNEVSKO, O. A., KOCHKONOGOV, A. S., KOSTORNICHENKO, V. F., Taganrog Radio Engineering Institute

"A Device for Stabilizing the Average Frequency in Random Pulse Generators"

USSR Author's Certificate No 291213, filed 22 Sep 69, published 29 Mar 71
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B223 P)

Translation: The device can be used for stabilizing the intensity of any random pulse train varying over a wide range. Streams of random pulses with stabilized intensity are used in studying various queuing systems, determining the interference suppression of data transmission systems, and modeling various technical systems. Devices are known for stabilizing the average frequency in random pulse generators. These devices are constructed on the principle of automatic control of the noise discrimination level and contain converters, filters, a comparison circuit, and an amplifier. The purpose of the invention is to simplify the electrical circuit of the stabilization device, to improve its reliability by reducing the number of component

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USSR

DOLGOPOLOV, V. N. et al., Soviet Patent No 291213

parts in the circuit, and to provide stabilization of the average frequency throughout the entire range of variation without additional switching in the feedback circuit, while maintaining effective and simple control of the average frequency of the random pulse generator. In the proposed device, which is constructed on the principle of a closed automatic control system and contains a random pulse generator, a device for converting the average frequency of the random pulses to DC voltage, a DC amplifier, a low-frequency filter and a device for regulating the average frequency, the above-mentioned purpose is achieved by combining the comparison element, DC amplifier, and device for controlling the average frequency of the random pulses into a bridge-type balanced DC amplifier. Two illustrations.

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USSR

UDC: 621.315.592

IVANOVA, Ye. I., BOVOGRUDSKIY, B. V., PARITSKIY, L. G., Physicotechnical
Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad

"A Semiconductor Photographic System Based on High-Resistance Gallium
Arsenide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1831-
-1834

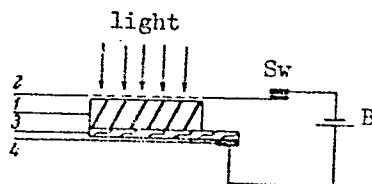
Abstract: A semiconductor photographic system based on high-resistance gallium arsenide without a protective coating on the semiconductor is proposed which combines the advantages of the photoconductographic and semiconductor-electrolyte photographic systems. The photographic process is diagrammed in the figure. The image is exposed on photoconductor (1) on the same side as semitransparent nickel electrode (2). A current-conducting cellophane film (3) impregnated with electrolyte is pressed tightly against the photo-receiver from the other side. The area of the film is greater than that of the photoconductor, and the excess area is in contact with a copper or graphite counter-electrode (4). During exposure the minus side of battery B is connected to the semitransparent nickel electrode, and the plus side

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USSR

IVANOVA, Ye. I. et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1831-1834

is connected to the counter-electrode. The counter-electrode (anode) is located to the side of the frame area at such a distance that the products of anode reaction formed in the thin film around the counter-electrode can not diffuse into the frame area and fog the image. The electrical and optical characteristics of the proposed system are discussed.



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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ACID BASE PROPERTIES OF COBALT, III, TRANS DIOXINES -U-
AUTHOR--(03)-ABLOV, A.V., BOVYKIN, B.A., ZEMLYAK, V.YU.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 466-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COBALT COMPLEX, OXIME, POTENTIOMETRIC TITRATION,
SPECTROPHOTOMETRY, DISSOCIATION CONSTANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0819 STEP NO--UR/0078/70/015/002/0466/0469
CIRC ACCESSION NO--AP0136253
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136253

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ACID DISSOCN. CONSTS. (K SUBA) OF (CO(OH) SUB2 A SUB2) PRIMEPOSITIVE, WHERE A EQUALS BETA OR GAMMA SUBSTO. PYRIDINE (PY) AND OH EQUALS MEC(:NOH)C (:NO PRIMENEGATIVE) ME, WERE DETD. POTENTIOMETRICALLY AND SPECTROPHOTOMETRICALLY. THE VALUES OF PK SUBA FOR COMPLEXES HAVING A EQUALS GAMMA MEPY, BETA CLPY, BETA CH SUB2 :CHPY, BETA NH SUB2 PY, BETA ETPY ARE TABULATED. PK SUBA VALUES OF FREE A CHANGE WITH SUBSTITUTION FROM 2.84 TO 6.02 WHILE THOSE OF (CO(OH) SUB2 A SUB2) PRIMEPOSITIVE ARE WITHIN A VERY NARROW VALUE RANGE OF 7.15-7.40. FACILITY: KISHINEV. GOS. UNIV., KISHINEV, USSR.

UNCLASSIFIED

Acc. Nr: **AP0047115**

Ref. Code: **URO504**

PRIMARY SOURCE: **Terapevticheskiy Arkhiv**, 1970, Vol 42, Nr / ,
pp **58-61**

**HISTOLOGICAL, ENZYMATIC AND ELECTRON MICROSCOPIC
CHANGES IN THE MUCOSA OF THE STOMACH AND SMALL
INTESTINE IN PATIENTS WITH CHRONIC HEPATITIS
AND LIVER CIRRHOSIS**

N. F. Nikolov, A. G. Boyadzhiyeva, D. D. Doychinov

Summary

A total of 73 patients with chronic hepatitis and liver cirrhosis were examined. Besides histological study of biopsy material, in 16 patients the authors determined phosphatase, and in 10 — electron microscopic investigation was conducted. Normal and almost normal gastric mucosa was found in 36.8% of the patients, superficial gastritis in 33.4%, initial atrophic gastritis in 13% and protracted atrophic gastritis in 16.6%. The principal and parietal cells were in the condition of high activity, as much expressed as renal decompensation. Normal mucosa of the small intestine was established in 42% of the cases, partial atrophy in 40.9% and subtotal atrophy in 17.1%. Electron microscopic resorptive cells in cases with subtotal atrophy did not differ from those in sprue. There was established a relation between the degree of steatorrhea and changes of the small intestine.

REEL/FRAME

19790607

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNTHESIS OF VINYL FORMATE IN A FLUIDIZED CATALYST BED -U-

AUTHOR--(04)--AKOPYAN, A.YE., BOYADZHIAN, V.K., YERITSYAN, V.K., OVSEPYAN,
S.S.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(2), 193-9

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VINYL COMPOUND, FORMIC ACID, CARBOXYLIC ACID ESTER, FLUIDIZED
BED, CATALYTIC ORGANIC SYNTHESIS, ACETYLENE, ACETATE, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/1862

STEP NO--UR/0316/70/023/002/0193/0199

CIRC ACCESSION NO--AP0123650

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT/0

CIRC ACCESSION NO--AP0123650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS OF VINYL FORMATE (I) FROM ACETYLENE AND FORMIC ACID IN THE VAPOR PHASE OVER FLUIDIZED ZN AND CD CATALYSTS WAS EXAMD. IN A CONTINUOUS REACTOR (1969). THE ORDER OF CATALYST ACTIVITY WAS: CD FORMATE IS LESS THAN ZN FORMATE IS LESS THAN MIXT. 1:1 OF BOTH (IN ALL CASES ON ACTIVATED C SUPPORT). THE OPTIMUM TEMP. FOR MAX. YIELD OF I AND MIN. BY PRODUCTS (ACETALDEHYDE, VINYL ACETATE, CROTONALDEHYDE) WAS 180DEGREES, AND THE OPTIMUM RATIO II-III WAS 3.5:1. FACILITY: EREVAN. OTD. NAUCH. ISSLED. INST. POLIM. PLASTMASS, EREVAN, USSR.

UNCLASSIFIED

Alkaloids

USSR

UDC 542.91+547.752

BOYAKHCHYAN, A. P., OGANESYAN, L. L., and TATEVOSYAN, G. T., Institute of
~~Fine Organic Chemistry~~, Acad. Sc. Armenian SSR, Yerevan

"Indole Derivatives. XXXI. Indole Analogs of Erythrine Alkaloids With a Six-Membered D Ring"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 1, 1971, pp 64-69

Abstract: Synthesis of benz(j)indolo(2,3-h)quinolizine type compounds is described. A mixture of tryptamine, β -(2-ketocyclohexyl)propionic acid and xylene was refluxed in a nitrogen atmosphere, xylene was removed, the residue dissolved in chloroform, washed and dried, and the solvent removed. Crystallization from methanol gave an unsaturated lactam, m.p. 198° which could be converted to 7-oxo-1,2,3,4,4a,5,6,7,9,10-decahydrobenz(j)indolo-(2,3-h)quinolizine (I), m.p. 287° by treatment with hydrochloric acid. The enol lactone of β -(2-oxocyclohexyl)propionic acid reacted with tryptamine in benzene, the crystalline material formed was separated, the benzene solution was chromatographed on an alumina column to give a tryptamide of β -(2-oxocyclohexyl)propionic acid, m.p. 107°, which again could be converted to (I) by treatment with HCl. In a similar manner 7-oxo-9-methyl-1,2,3,4,-
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USSR

BOYAKHCHYAN, A. P., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 1, 1971, pp 64-69

4a,5,6,7,9,10-decahydrobenz(j)indolo(2,3-h)quinolizine (II), m.p. 218° was prepared. Lithium aluminum hydride reduction of (I) gave 1,2,3,4,4a,5,6,7,-9,10-decahydrobenz(j)indolo(2,3-h)quinolizine, m.p. 69-70°, and the reduction of (II) gave 9-methyl-1,2,3,4,4a,5,6,7,9,10-decahydrobenz(j)indolo(2,3-h)-quinolizine, m.p. 51-52°.

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- 4 -

USSR

UDC: 542.91 + 547.94

BOYAKHCHYAN, A. P., and TATEVOSYAN, G. T., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Indole Derivatives. XXX. 2,2-Dimethyl- and 2,2,8-Trimethyl-4-hydroxy-1,2,3,4,4a,5,8,9-octahydro-6Hbenz(i)indolo-(2,3-g)-indolizines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 1, 1970, pp 65-68

Abstract: A mixture of 2 g 2,6-diketo-4,4-dimethylcyclohexyl acetic acid and 1.6 g tryptamine was refluxed for 5 hrs in xylene under a stream of nitrogen. The solvent was then evaporated and the residue dissolved in chloroform, washed, dried and evaporated. The oily residue was recrystallized from aqueous methanol to yield 2 g of 2,2-dimethyl-4,6-diketo-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine, m.p. 246° (I). In an analogous manner the 2,2,8-trimethyl-4,6-diketo-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine (II), m.p. 208° was obtained. The above compounds were reduced to 4-hydroxy derivatives. To an ether solution of lithium aluminum hydride (I) or (II) dissolved in a mixture of dioxane, anisole and ether was added, refluxed for 10 hrs then decomposed with water. The mixture was separated, dried and the hydrochloride of

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USSR

BOYAKHCHYAN, A. P., and TATEVOSYAN, G. T., Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 1, 1970, pp 65-68

2,2-dimethyl-4-hydroxy-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine (III), m.p. 146⁰ was obtained from (I), while (II) gave the hydrochloride of 2,2,8-trimethyl-4-hydroxy-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine (IV), m.p. 123⁰. The free base of (III) melted at 82-83⁰, while the base of (IV) proved to be an oil.

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1/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--INDOLE DERIVATIVES. XXX. 2,2,DIMETHYL, AND 2,2,8,
TRIMETHYL,4,HYDROXY,1,2,3,4,4A,5,8,9,OCTAHYDRO,6H,BENZ I INDOLO 2,3,G

AUTHOR--(02)-BOYAKHCHYAN, A.P., TATEVOSYAN, G.T.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO ANALOGS OF ERYTHRIN ALKALOIDS, 2,2,DIMETHYL, (I) AND 2,2,8,TRIMETHYL,4,HYDROXY,1,2,3,4,4A, 5,8,9,OCTAHYDRO,6H,BENZ(I)INDOLO(2,3,G)INDOLIZINE (II), WERE PREPD. THUS, A MIXT. OF 2 G 2,6,DIOXO,4,4,DIMETHYLCYCLOHEXYLACETIC ACID (III) WITH 1.6 G TRYPTAMINE WAS REFLUXED IN XYLENE IN N ATM. 5 HR TO GIVE 62PERCENT 2,2,DIMETHYL,4,6,DIOXO,1,2,3,4,4A,5,8,9, OCTAHYDRO,6H,BENZ(I)INDOLO(2,3,G)INDOLIZINE (IV), M. 246DEGREES. SIMILAR CONDENSATION OF 3.5 G III WITH 3.08 G ALPHA,METHYLTRYPTAMINE GAVE 66PERCENT 2,2,8,TRIMETHYL,4,6,DIOXO,1,2,3,4,4A,5,8,9,OCTAHYDRO,6H, BENZ(I)INDOLO(2,3,G)INDOLIZINE (V), M. 208DEGREES. TO A SOLN. OF 3.2 G LIAIH SUB4 IN 100 ML ET SUB2 O, A SOLN. OF 6.6 G IV IN A MIXT. OF 30 ML DIOXANE, 50 ML ANISOLE, AND 100 ML ABS. ET SUB2 O WAS ADDED, AND THE MIXT. REFLUXED 10 HR AND WORKED UP TO GIVE I, M. 82-3DEGREES (DECOMPN.). SIMILARLY V GAVE II, VISCOUS YELLOW OIL; HCl SALT M. 123DEGREES (ET SUB2 O). THE UV SPECTRA OF IV AND V WERE MEASURED IN ETOH AND ALSO THE DATA FOR THE IR SPECTRA OF I, II, IV, AND V ARE GIVEN. FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

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BOYARCHENKO, A. N., LUGANSKAYA, L. A.

"Results of Approximate Consideration of Influence of Computer Reliability on Calculation Time of Problems Solved in Enterprise ACS"

Tr. NII Upravl. Mashin i Sistem [Works of Scientific Research Institute for Control Machines and Systems], No 5, 1971, pp 77-82, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V750).

NO ABSTRACT.

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USSR

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BOYARCHENKOV, M. A., KERBNIKOV, F. I., RAYEV, V. K., and ROZENBLAT, M. A.

Magnitnyye Reshayushchiye Elementy (Magnetic Decision Elements), Moscow, "Sovetskoye Radio," 1971, 280 pp, Annotation p 2, Table of Contents pp 278-279

Translation of Annotation and Table of Contents: The book is devoted to a systematic consideration of the theory, construction principles, and methods for the practical realization of magnetic decision elements used for data processing in analog form in automatic control systems. Along with elements designed to perform the typical functions of summation, multiplication, integration, etc., the book also considers memory elements for analog quantities, memory integrators, sensitive measuring amplifiers for data input into an analog computer, etc. Methods are given for stabilization of the characteristics of zero drift reduction, for increasing the precision and improving the dynamic characteristics of decision elements, as well as the principal parameters of elements which have been realized in practice.

The book is intended for engineers and scientists engaged in the creation and use of automation and computer equipment, as well as for students of the corresponding specialties.

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BOYARCHENKOV, M. A., et al., Magnitnyye Reshayushchiye Elementy, Moscow,
"Sovetskoye Radio," 1971

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Sovetskoye Radio," 1971

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BOYARCHENKOV, M. A

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(3)

QUESTIONS IN THE CONTROL OF CYLINDRICAL MAGNETIC DOMAINS IN
MONOCRYSTALLINE WAFERS OF MAGNETICALLY UNIAXIAL FERRITES
M. A. Boyarchenkov and V. K. Rayev

pp 72-87

The formation of ordered domain structures in single crystals of some types of magnetically uniaxial ferrites creates favorable prerequisites for their technological use. The study of conditions of the stable existence of such structures has been examined by Sherwood, Kiy, Elitz, Bobeck, Ingle and also Kardeyeva and Shur.

In monocrystalline wafers (films) of hexagonal, cubic or orthorhombic ferrites with an open domain structure and oriented normally toward the c axis there are the conditions necessary for the formation of isolated cylindrical domains (oriented) and have good mobility (more than 1000 cm/(second) depending on the type of material used the dimensions of a domain vary in the range of 1 to 100 microns. The first results in the practical use of cylindrical magnetic domains in the logical and storage devices of digital computers were obtained by Bobeck [1] on wafers of rare-earth orthoferrites.

Control of Cylindrical Magnetic Domains by the Generation of
Magnetostatic Fields

Existing methods of controlled movement of cylindrical magnetic domains in monocrystalline wafers of magnetically uniaxial crystals envisage the creation of local gradient fields comparable with the dimensions of the domain. The condition of movement is described in that case by the inequality [2]:

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CONTAINS AN ANALYSIS OF THE STRUCTURE OF ENVELOPES EJECTED DURING THE OUTBURSTS OF NOVAE. THE DATA USED FOR THIS PURPOSE WERE: (A) DIRECT PHOTOGRAPHS OF ENVELOPES AND THE PHOTOGRAPHS TAKEN WITH THE USE OF DIFFERENT COLOR FILTERS; (B) SPECTRA OF ENVELOPES. THE ENVELOPE OF DQ HER IS STUDIED MOST CAREFULLY. THE ANALYSIS OF ALL AVAILABLE DATA FOR THE ENVELOPES AROUND DQ HER AND V 603 AQL PERMITS ONE TO OUTLINE A MORPHOLOGICAL MODEL OF THESE ENVELOPES. IT APPEARS, THAT THE STRUCTURE OF BOTH THESE ENVELOPES IS APPROXIMATELY IDENTICAL AND THAT THE DIFFERENCE IN THE OBSERVED PROPERTIES OF THE PHOTOGRAPHIC IMAGES OF THE NEBULAE IS CONNECTED WITH A DIFFERENCE IN THE ORIENTATION OF THE "POLAR" AXES OF THE ENVELOPES RELATIVE TO THE LINE OF SIGHT. THE ENVELOPE EJECTED DURING THE OUTBURST OF T AUR REVEALS THE SAME PROPERTIES, WHICH ARE CHARACTERISTIC FOR THE ENVELOPES OF DQ HER AND V 603 AQL. FROM THIS IT IS CONCLUDED THAT THE DISTRIBUTION OF GASES INSIDE THE ENVELOPES OF THE MAJORITY OF NOVAE IS APPROXIMATELY OF THE SAME CHARACTER. THIS SPEAKS IN FAVOR OF THE PRESENCE OF CERTAIN FORCES AROUND MANY NOVAE, WHICH GUIDE THE MOTION OF EJECTED PLASMA ALONG SOME QUITE DEFINITE DIRECTIONS INSIDE RATHER SMALL SOLID ANGLES. IT SEEMS THAT THE ONLY CONCEIVABLE FORCES OF THIS TYPE MAY BE THE FORCES OF A MAGNETIC NATURE. THIS HYPOTHESIS FOR EXAMPLE PERMITS ONE TO EXPLAIN THE DIFFERENCE BETWEEN THE ENVELOPE OF GK PEP AND THE ENVELOPES OF DQ HER, V 603 AQL, AND T AUR. COMPARING THE VELOCITY OF EXPANSION OF THE ENVELOPE OF DQ HER AND THE RATE OF CHANGE OF ITS ANGULAR SIZE, IT IS COMPUTED THAT THE DISTANCE TO DQ HER IS EQUAL TO 320 PC.

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